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with various other physiological operations, come to be so far removed, as in our experience they seem to be, from the voluntary life of the organism as a whole? Is it conceivable that in the full light of knowledge of the nature of organization we might acquire some degree of conscious and voluntary control, either direct or indirect, over these organizing and form-dominating energies? Herein, surely, would lie a most potent factor in the further evolution and destiny of our own race.

The contemplation of the imaginable consequences of this idea of dominant organizing energies overwhelms us beneath an avalanche of questions, of whose asking the only justification lies in the fact that they are properly biological questions for which biology at present has no answer. Certain of these questions may seem to carry us beyond the world of possibilities and into the misty realm of dreams. Yet, does not what we dream become possible even in the dreaming?

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*THE BEQUESTS OF THE LATE
MORRIS LOEB*

By the will of the late Morris Loeb, formerly professor of chemistry at New York University, large bequests are made to educational, scientific and charitable institutions. Subject to the life interest of Mrs. Loeb, \$500,000 is bequeathed to Harvard University for the advancement of physics and chemistry. Twenty-five thousand dollars are bequeathed to the American Chemical Society for the establishment of a type museum of chemicals, to be established in the Chemists' Club of New York City, the U. S. National Museum or the American Museum of Natural History, and \$2,500 is bequeathed to the National Academy of Sciences. His stock in the company owning the Chemists' Club is bequeathed to the company. Fifty thousand dollars are bequeathed to the Hebrew Technical Institute

and \$250,000 to the Solomon Betty Memorial Home for Convalescence. The residuary estate, subject to Mrs. Loeb's life interest, is to be equally divided among the Smithsonian Institution at Washington and the following New York institutions: The American Museum of Natural History, the Metropolitan Museum of Art, Cooper Union, the Hebrew Technical Institute, the New York Foundation, the Jewish Protectory and Aid Society, the Hebrew Charities Building and the Educational Alliance. The Smithsonian Institution receives its bequest to further the exact sciences. The American Museum of Natural History is to get a collection for the illustration of the industrial use of natural products in ancient and modern times. The Metropolitan Museum of Art is to purchase and exhibit objects illustrating the development of artistic handicraft in Europe and America. Cooper Union is to endow a professorship. The Hebrew Technical Institute is to establish technical courses for mechanics. The Jewish Protectory and Aid Society bequest is for the relief of employees. The Hebrew Charities Building is to use the money to establish a library and to reduce the rent for the charitable societies occupying the building. The Educational Alliance is to devote the gift to work among women and children.

SCIENTIFIC NOTES AND NEWS

DR. CARL L. ALSBERG, chemical biologist of the Bureau of Plant Industry, has been appointed chief of the Bureau of Chemistry in succession to Dr. Harvey W. Wiley.

MR. W. H. FOX, of Philadelphia, a student of art, has been appointed curator in chief of the Brooklyn Museum to fill the vacancy caused by the resignation of Dr. Frederic A. Lucas, to accept the directorship of the American Museum of Natural History.

THE anniversary meeting and dinner of the Royal Society was held on November 30. Sir Archibald Geikie made the annual address. At the dinner toasts were proposed by Sir Rickman Goldee, president of the Royal College of Surgeons, by Prince Lichnowsky, the German ambassador, and by Professor Elie

Metchnikoff. Sir Archibald Geikie spoke as follows in regard to the award of the Buchanan medal: "This medal is awarded every five years in recognition of distinguished services to hygienic science or practise in the direction either of original research or of professional, administrative, or constructive work, without limit of nationality or sex. It has this year been adjudged to Colonel William Crawford Gorgas, for his remarkable services under the American government, in combating the terrible scourge of yellow fever. As chief sanitary officer at Havana, Cuba, he there for the first time applied those sanitary methods by which the yellow fever was almost entirely eradicated from the place. This marked success led to his being entrusted in 1904 with a similar but greater task in the Panama Canal zone, where the same disease was rampant, and where he is still engaged. His success in that region has been not less conspicuous."

THE Nobel prizes were presented by the King of Sweden at a banquet in Stockholm on December 10, when those to whom awards had been made were present, including Dr. Alexis Carrel, of the Rockefeller Institute, New York City.

THE American Society of Naturalists will hold its annual dinner at the Colonial Hotel, Cleveland, on the evening of January 2, when the presidential address will be given by Professor E. G. Conklin, of Princeton University, on "Heredity and responsibility." Members of other scientific societies are invited to be present and may obtain tickets at a cost of two dollars from the secretary of the society.

DR. FRANZ PFAFF has resigned from the chair of pharmacology and therapeutics in the Harvard Medical School. He plans a visit to California and Honolulu.

MR. T. FRANCIS CONNOLLY, of the Solar Physics Observatory, South Kensington, has been appointed an assistant-inspector of scientific supplies at the India Stores Department, Lambeth.

ON November 29 Mr. Edgar A. Smith, assistant-keeper in the zoological department

of the Natural History Museum, was, in view of his approaching retirement, presented by the director, Dr. L. Fletcher, F.R.S., on behalf of the subscribers, including many of his colleagues and other friends, with silver plate and other objects.

THE special board for biology and geology of Cambridge University has adjudged the Walsingham Medal for 1912 to Mr. Edgar Douglas Adrian, B.A., Trinity, for his essay entitled, "On the transmission of subnormal disturbances in normal and in incompletely recovered nerve."

PROFESSOR FRANCIS E. LLOYD, of McGill University, has been elected a corresponding member of the Centro de Ciencias, Letras, e Artes, Campinas, S. Paulo, Brazil, especially in recognition of his work on the desert rubber plant, guayule.

MR. J. T. SAUNDERS, last year demonstrator in invertebrate embryology in the University of Toronto, has been elected to a fellowship at Christ's College, Cambridge.

MR. N. CUNLIFFE, B.A., Trinity, has been appointed to the research studentship in medical entomology at Cambridge University.

DR. THEODORE LYMAN, of Harvard University, and Mr. N. K. Hollister, of the division of mammals of the U. S. National Museum, have returned from an expedition to the Altai Mountains, Siberia and Mongolia, with a large collection of mammals, which will be divided between the U. S. National Museum and the Museum of Comparative Zoology of Harvard University.

THE "Elements of Physical Chemistry" (fourth edition) by Dr. Harry C. Jones, professor of physical chemistry at the Johns Hopkins University, has been translated into Russian and Italian.

DR. HARVEY W. WILEY lectured at the University of Illinois on December 7, and was entertained at dinner by Phi Lambda Upsilon, the honorary chemical fraternity.

PROFESSOR WALTER S. TOWER, of the University of Chicago, has lectured before the Geographical Society of Chicago, on "A Journey through Argentina."

JOSEPH H. JAMES, professor of chemical engineering in the Carnegie Institute of Technology, Pittsburgh, delivered the address at the annual meeting of the Columbus Section of the American Chemical Society on the subject, "Acetylene Gas, its manufacture, transportation and storage."

PROFESSOR WILLIAM T. SEDGWICK, of the Massachusetts Institute of Technology, lectured on December 11 in the Barnum Museum, Tufts College, on "Sanitary Biology."

DR. JOHN M. MACFARLANE, professor of botany in the University of Pennsylvania, delivered a lecture on December 9, before the Natural History Society of Wilmington, Del., on "Evident and Hidden Flowers and Plants."

PROFESSOR LIGHTNER WITMER, of the psychological department of the University of Pennsylvania, addressed the Brooklyn Training School for Teachers on December 2, on the treatment of gifted children in the schools and the Montessori system.

ON November 25 Professor Hugo de Vries, of Amsterdam, lectured at Rutgers College on "A New Conception of the Evolution Theory." On the same day Dr. Charles P. Berkey spoke before the New Jersey State Microscopical Society on "Geology and Engineering in the Catskill Aqueduct."

THE Royal Society of Edinburgh proposes to commemorate in 1914 the tercentenary of the announcement of the discovery of logarithms by John Napier.

SIR GEORGE HOWARD DARWIN, Plumian professor of astronomy and experimental philosophy at Cambridge University, distinguished for his contributions to our knowledge of the tides and kindred phenomena, has died at the age of sixty-seven years.

THE death is announced, in his seventy-ninth year, of Sir Charles Whitehead, a British authority on agriculture.

PROFESSOR WILHELM FIEDLER died in Zürich on November 19 at the age of eighty-one years. Professor Fiedler is known by his investigations in descriptive geometry in connection with the geometry of position. He

also published German translations of a number of Salmon's works on higher geometry.

MR. L. S. CAMICIA, of Valdez, Alaska, a jeweler and optician, died in May, 1912. He was a Swiss, largely self-educated and intensely interested in nature. From 1898 to 1912 he visited the Valdez glacier once a year in the same month and accurately measured its retreat. He is the only resident of Alaska who is known to have maintained annual observations of the behavior of a glacier. He also kept a continuous daily weather record for the fourteen years at his residence in Alaska, and a series of manuscript notes on times and durations of earthquakes at Valdez that checks well with the accurate seismograph records.

THE legislative council of Mauritius has voted £200 as a contribution towards the fund which is being raised for the London School of Tropical Medicine. The fund has now reached £50,000.

THE alumni of the University of Minnesota living in Washington have been planning for the past two years to present the university with ground for a marine biological laboratory and station in the state of Washington and have now made a formal offer to the regents of ten acres on Cypress Island, one of the San Juan group, about fifty-five miles directly north of Seattle. The island is about four and a half miles long and nearly two miles wide. There is a freshwater lake and a fine spring. This particular tract of ground was chosen, after a very thorough survey of the country, in order to secure the very best possible location for such a station. The alumni propose to present this ten-acre tract to the university, and to erect a building or buildings suitable for the use of the station. They also offer to provide any minor additions that the university may require and will support two or three, or possibly more, scholarships.

IN the *Proceedings of the American Academy of Arts and Sciences*, Volume 48, Number 11, pp. 389-507, November, 1912, Professors Edwin B. Wilson and Gilbert N. Lewis have published a long and systematic account of the theory of relativity under the title, "The

Space-time Manifold of Relativity. The Non-Euclidean Geometry of Mechanics and Electromagnetics." The paper contains an elementary account of the non-Euclidean geometry which lies at the basis of any real treatment of relativity free from imaginaries. The vector analysis germane to this geometry is developed from the start, and is not only interesting for its applications to the subject at hand, but instructive as an example of non-Euclidean vector analysis. A place of fundamental importance is given to the singular or minimal elements of the space, that is, to lines of zero length, planes of zero area, and so on. By this means radiant energy and momentum may be treated with great simplicity and power. In particular the questions of the continuous and discontinuous in physics may be discussed from an illuminating point of view. The methods adopted make it possible to develop the formulas connected with the electron, whether considered as a point charge or as continuously distributed, without any approximations, in particular without the common concept of "quasi-stationary" motion. Like all the papers appearing in the *Proceedings* of the Academy this memoir is published separately in paper covers and may be purchased separately directly from the American Academy, 28 Newbury Street, Boston.

THE high commissioner for Australia has, as we learn from *Nature*, received official information of the arrangements that are being made for the visit of the British Association to Australia in 1914. A federal council has been formed, under the patronage of the governor-general, with the prime minister as chairman. The members of the association will arrive at Fremantle on August 4, Adelaide August 8, Melbourne August 13, Sydney August 20 and Brisbane August 27, and those returning home by the shortest route will reach London on October 11. The Commonwealth has granted £15,000 to be handed to the British Association to cover the passages of not fewer than 150 official representatives, including selected Dominion and foreign men of science. Dr. Rivett has been appointed organizing secretary, and will visit London next

year. The governments of the several states offer special facilities for prolonged visits of men of science interested in special problems in Australia.

ANTHRACITE coal was at one time an important factor in blast-furnace practice, but its use in that line of industry has now almost entirely ceased, according to E. W. Parker, of the United States Geological Survey, as it has been supplanted by coke made from bituminous coal. The principal demand for anthracite will be in the future, as it has been in the more recent past, restricted largely to domestic trade, for which such sizes as furnace, egg, stove and chestnut are required. The breaking down of the lump coal, which was formerly a marketable product, for the preparation of the domestic sizes results in a much larger proportion of the small or undesirable sizes, all of which are sold at less than the cost of production. All the profits on the mining operations must be obtained from the prepared domestic sizes, for the revenue obtained from the smaller sizes, which are sold largely in competition with bituminous coal for steaming purposes, serves only to reduce the cost of the domestic sizes. The conditions under which the anthracite mines are operated, the greater depths to which the workings are carried, the consequent increased expense of mining and the increasing cost of labor all contribute to make anthracite fuel more and more a luxury. During recent years the anthracite operators have adopted the policy of making an allowance of 50 cents per ton from circular prices for domestic coal purchased in April of each year, with an advance of ten cents per ton for each succeeding month until the schedule prices are restored in September. This has had a more salutary effect in steadying the anthracite trade than any other action taken by those controlling the anthracite industry. Its purpose is to encourage the purchase of coal in the spring and early summer, making the cellars of the consumers the storage places for the following winter, and at the same time to cause the mines to be operated more regularly, thus giving steadier employment to employees throughout the year.